

FLIP-CHIP LIGHT EMITTING DIODE

Abstract

In a method of manufacturing a flip-chip light emitting diode, semiconductor layers (14, 16, 16', 18, 18', 20, 20') that define a light emitting electrical junction (18, 18') are epitaxially deposited on a principle surface of an epitaxy substrate (12, 12'). A light-emitting device mesa (24, 24') is formed from the epitaxially deposited semiconductor layers. A first electrode (30, 30', 54) is formed on a portion of the device mesa distal from the epitaxy substrate. The first electrode electrically contacts the device mesa. A second electrode (32, 32', 56) is disposed on the principle surface of the substrate. First and second electrodes are flip-chip bonded to bonding pads (40, 40', 42, 42'). The epitaxy substrate is removed. An electrically conductive, light-transmissive window layer (14, 14') is arranged over the device mesa and the second electrode. The window layer forms an electrical connection between the device mesa and the second electrode.